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Acute Coronary Syndromes

Q-WAVE REGRESSION AFTER MYOCARDIAL INFARCTION IS ASSOCIATED WITH INCREASED IMPROVEMENT OF LEFT VENTRICULAR EJECTION FRACTION

ACC Moderated Poster Contributions
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Background: There is limited data regarding correlation of Q-wave regression and preservation of left ventricular ejection fraction (LVEF) in patients with acute myocardial infarction (MI).

Methods: Standard 12 lead electrocardiogram (ECG) was recorded in 200 ST-elevated myocardial infarction (STEMI) patients treated with primary percutaneous coronary intervention (PCI). The ECG was recorded before and following PCI and at 1, 4, 12 and 24 months of follow-up. Q-wave analysis was performed digitally and blinded by consensus of 2 investigators. Cardiac magnetic resonance imaging (CMR) was performed at 4 ± 2 days after reperfusion and repeated after 4 and 24 months.

Results: The incidence of Q-wave MI was 58%, 1 hour after PCI. At 24 months of follow-up, 22% of patients with initial Q-wave MI displayed Q-wave regression. At baseline, patients with Q-wave MI had larger infarct size (24±10 % vs. 17± 9 % LV mass , p<0.01) and lower LVEF (37±8 % vs. 45± 8%, p<0.001) as compared to non-Q-wave MI patients. Patients displaying Q-wave regression displayed baseline LVEF values equal to patients with permanent Q-wave MI but had a significantly larger LVEF improvement (9±11 %) as compared to both Q-wave MI (2±8 %) as well as non-Q-wave MI patients (3±8 %, p=0.04 for both comparisons)

Conclusion: The Q-wave/non-Q-wave MI distinction is of clinical relevance; Q-waves predict a lower LVEF and a larger MI on follow-up. Q-wave regression is associated with larger shrinkage of infarct size and improvement of LVEF as assessed with CMR.